

# INTERNATIONAL SEARCH REPORT

Application No  
PCT/US2004/039066

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12N15/53 C12N9/64

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, EMBASE, Sequence Search

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category \* Citation of document, with indication, where appropriate, of the relevant passages

Relevant to claim No.

|   |   |                    |
|---|---|--------------------|
| X | DATABASE NCBI 'Online!<br>11 August 2003 (2003-08-11),<br>RAOULT D. ET AL.:<br>XP002327070<br>Database accession no. AA044722   | 1,2,7,<br>11,44-47 |
| Y | abstract  | 89-91,<br>109      |
| X | SHIMOI HITOSHI ET AL: "Molecular<br>structure of Rarobacter faecitabidus<br>protease I; A yeast-lytic serine protease<br>having mannose-binding activity"<br>JOURNAL OF BIOLOGICAL CHEMISTRY,<br>vol. 267, no. 35, 1992, pages 25189-25195,<br>XP002327067<br>ISSN: 0021-9258 | 1,2,7,42           |
| Y | the whole document  | 89-91,<br>109      |

-/-

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another claim or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

6 June 2005

Date of mailing of the international search report

05. 09. 2005

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PCT/US2004/039066

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |   |                              |
|--|---|------------------------------|
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No.        |
| X  | MINE O M ET AL: "USE OF DEGENERATE PRIMERS AND HEAT-SOAKED POLYMERASE CHAIN REACTION(PCR) TO CLONE A SERINE PROTEASE ANTIGEN FROM DERMATOPHILUS CONGOLENSIS" IMMUNOLOGY AND CELL BIOLOGY, CARLTON, AU, vol. 75, no. 5, October 1997 (1997-10), pages 484-491, XP008000691 | 1,2,7,42                     |
| Y  | the whole document  | 70,76, 89-91                 |
| X  | SAEKI KAZUO ET AL: "Purification and characterization of an alkaline protease from Oerskovia xanthineolytica TK-1" JOURNAL OF FERMENTATION AND BIOENGINEERING, vol. 77, no. 5, 1994, pages 554-556, XP002327068   | 1-3                          |
| Y  | ISSN: 0922-338X<br>the whole document   | 70,71, 76,89-91              |
| X  | LONGSHAW C M ET AL: "Kytococcus sedentarius, the organism associated with pitted keratolysis, produces two keratin-degrading enzymes." JOURNAL OF APPLIED MICROBIOLOGY, vol. 93, no. 5, 2002, pages 810-816, XP002327069  | 1,2                          |
| Y  | ISSN: 1364-5072<br>the whole document   | 70,71, 89-91                 |
| X  | WO 01/58276 A (F HOFFMANN-LA ROCHE AG; OESTERGAARD, PETER, RAHBEK; SJOEHOLM, CARSTEN) 16 August 2001 (2001-08-16)   | 8,11                         |
| Y  | the whole document  | 109                          |
| X  | DATABASE EMBL 'Online!<br>20 June 2002 (2002-06-20),<br>HONG S.:<br>XP002327071   | 61-64                        |
| Y  | retrieved from EBI<br>Database accession no. AF515832<br>abstract   | 65,66, 87-89                 |
| Y  | US 5 646 028 A (LEIGH ET AL)<br>8 July 1997 (1997-07-08)<br>cited in the application  | 65,66, 70,71, 76, 87-91, 109 |
|  | the whole document  |                              |

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application No.  
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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-47, 54-84, 87-98, 103, 105-107, 109 completely; 48-53, 85, 86 partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-47,54-84,87-98,103,105-107,109 completely; 48-53,85,86 partially

An isolated serine protease obtained from a member of the Micrococcinea, in particular from Cellulomonas 6984 according to SEQ ID NO:8, encoding polynucleotides, in particular according to SEQ ID NO:1 and 4, mutants and variants thereof, as well as related subject-matter as claimed. Said variants being in particular serine proteases from other Cellulomonas species according to SEQ ID NO:53-66.

2. claims: 48-53,85,86 partially

idem for SEQ ID NO:67,68 (*Oerskovia turbata*)

3. claims: 48-53,85,86 partially

idem for SEQ ID NO:69,70 (*Oerskovia jenensis*)

4. claims: 48-53,85,86 partially

idem for SEQ ID NO:71,72 (*Cellulosimicrobium cellulans*)

5. claims: 48-53,85,86 partially

idem for SEQ ID NO:73,74 (*Promicromonospora citrea*)

6. claims: 48-53,85,86 partially

idem for SEQ ID NO:75,76 (*Promicromonospora sukumoe*)

7. claims: 48-53,85,86 partially

idem for SEQ ID NO:77,78 (*Xylanibacterium ulmi*)

8. claims: 99-102,104,108 completely

A cleaning composition that comprises at least one stable enzyme, said cleaning composition comprising a sufficient amount of a pH modifier to provide said composition with a neat pH of from about 3 to about 5, said composition being essentially free of materials that hydrolyze at a pH of from about 3 to about 5, as well as subject-matter related thereto.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Application No  
PCT/US2004/039066

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
| WO 0158276                                | A                   | 16-08-2001                 | 07-10-2004          |
|   |                     | AU 777210 B2               | 20-08-2001          |
|   |                     | AU 3544601 A               | 19-05-2005          |
|   |                     | AU 781415 B2               | 20-08-2001          |
|   |                     | AU 4236601 A               | 21-01-2003          |
|   |                     | BR 0108164 A               | 25-02-2003          |
|   |                     | BR 0108165 A               | 16-08-2001          |
|   |                     | CA 2395266 A1              | 16-08-2001          |
|   |                     | CA 2395343 A1              | 19-02-2003          |
|   |                     | CN 1398161 A               | 19-02-2003          |
|   |                     | CN 1398162 A               | 16-08-2001          |
|   |                     | WO 0158275 A2              | 20-11-2002          |
|   |                     | WO 0158276 A2              | 20-11-2002          |
|   |                     | EP 1257175 A2              | 22-07-2003          |
|   |                     | EP 1257176 A2              | 22-07-2003          |
|   |                     | JP 2003521907 T            | 13-12-2002          |
|   |                     | JP 2003521908 T            | 13-12-2002          |
|   |                     | MX PA02007613 A            | 26-07-2004          |
|   |                     | MX PA02007614 A            | 26-07-2004          |
|   |                     | PL 357668 A1               | 07-07-2005          |
|   |                     | PL 357668 A1               | 19-08-2004          |
|   |                     | US 2005148060 A1           | 04-10-2001          |
|   |                     | US 2004161448 A1           | 30-01-2003          |
|   |                     | US 2001026797 A1           |                     |
|   |                     | US 2003021774 A1           |                     |
| US 5646028                                | A                   | 08-07-1997                 | NONE                |

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